

NEW GENERA, SPECIES AND RECORDS OF COLLEMBOLA
FROM AUSTRALIA, NEW ZEALAND AND NEW GUINEA

By H. WOMERSLEY, F.R.E.S., A.L.S., South Australian Museum

[Read 10 April 1942]

Superfamily PODUROIDEA Wom. 1933

Family ACHORUTIDAE Salmon 1941

= *Hypogastruridae* Börner 1913, Womersley 1939.

It has been shown by Folsom 1916, Bagnall 1940, and more recently by Salmon 1941, that the generic name *Hypogastrura* Bourlet 1839, revived by Börner 1906, is a homonym and invalid, and that *Achorutes* Templeton 1835, with *A. dubius* Templeton 1935 as genotype, must be used. The necessary change in the family name has been made by Salmon. Similarly Hypogastrurinae must be replaced by Achorutinae, and the old Achorutinae by Neanurinae, with the genus *Achorutes* of Börner being changed to *Neanura* MacGillivray.

Subfamily ACHORUTINAE Börner 1906

Achorutes armatus Nic. 1841—New Zealand: Manaka Hills, Auckland, 12 April 1941 (E. C. C.); Hunika Falls, Auckland, 12 April 1941 (C. S. W. R.).

Achorutes purpurascens Lubk.—New Zealand: Nelson, on tobacco plants, 9 October 1933 (E. C. C.).

Achorutes manubrialis Tullbg. 1869—New Zealand: Palmerston North, on swedes, September 1930 (W. Cottier).

Xenylla maritima Tullbg. 1869—Australia: Bell's Creek, Victoria, 24 June 1941 (R. T. M. P.). New Zealand: Palmerston North, on rotting swedes, 1931 (W. C.); on apple bark, 16 July 1932 (C. O. Burdon); Auckland, under dead white-wax scale, February 1941 (D. S.).

Subfamily NEANURINAE Börner 1906

Paranura australasiae Wom. 1935—Australia: Belgrave, Victoria, in rotting tree-fern, November 1941 (O. W. T.).

Pseudachorutes tasmaniensis Wom. 1936—Australia: Little Boys' Creek, Victoria, at 3,000-4,000 feet, 24 June 1941 (R. T. M. P.); Bell's Creek, Victoria, at 3,000-4,000 feet, 24 June 1941 (R. T. M. P.); West Tangil, Victoria, 3,000 feet, 23 July 1941 (R. T. M. P.).

Pseudachorutes pescotti n. sp.

(Fig. I, A-F)

Description—Length, to 2.0 mm. Colour, mottled blue-black. Antennae shorter than head-diagonal, ratio of segments = 3:4:3.5:9.5, as figured, III with a pair of subapical, clavate sensillae as figured. Ocelli, eight on each side on deeply pigmented patches. Postantennal organ with four lobes. Tibiotarsus with clavate setae; claws with fine indistinct inner tooth at three-fourths; empodial appendage absent. Furca as figured, dens with four setae, mucro with inner and outer lamellae, one-third length of dens. Dorsal setae short and sparse.

Location—Australia: Cumberland, Victoria, at 4,000 feet, 26 May 1941 (R. T. M. P.), several specimens.

Remarks—In my key (1939) this species runs down to *P. pacificus* Wom., a New Zealand species, from which it differs in having clavate tibiotarsal setae, and no strong inner tooth to the claw at one-third.

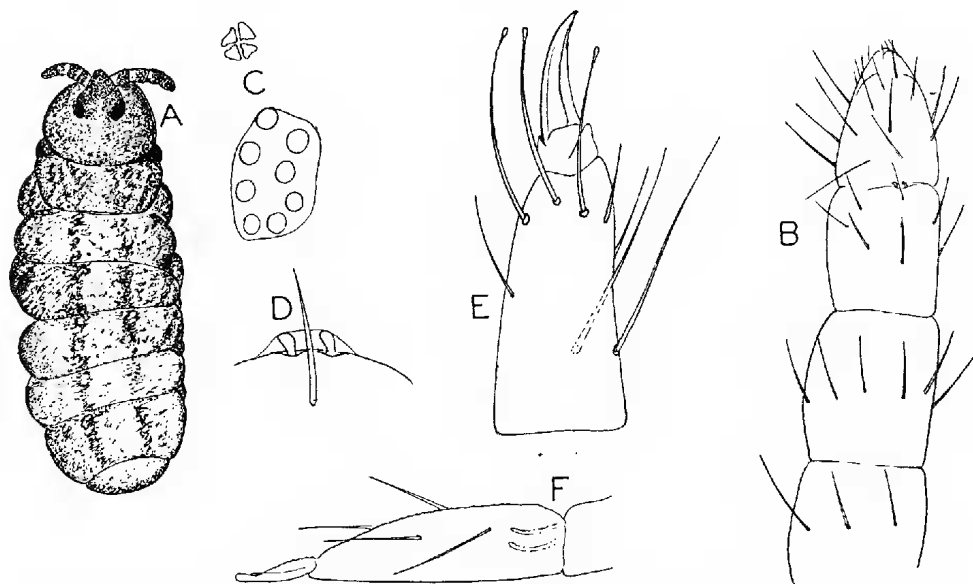


Fig. 1 *Pseudachorutes pescotti* n. sp.: A, dorsal view; B, antenna; C, ocelli and postantennal organ; D, sensory organ on ant. III; E, tibiotarsus and claw; F, furca.

Neanura muscorum (Templeton 1935)—New Zealand: Grafton Gully, Auckland, in soil, 29 June 1941 (D. S.).

Neanura hirtellus v. *cirratu*s (Schött, 1917)—Australia: Bell's Creek, Victoria, 24 June, 1941 (R. T. M. P.); West Tangil, at 3,000 feet, 23 July 1941 (R. T. M. P.).

Neanura radiata Salmon 1941—New Zealand: Waitakeri Ranges, Auckland, under bark of decaying log, 10 May 1941 (D. S.).

Family ONYCHIURIDÆ Börner 1913
Subfamily ONYCHIURINÆ Bagnall 1935

Onychiurus armatus (Tullbg. 1869)—New Zealand: Mount Wild, on Begonia bulbs, 15 January 1936 (Fielding).

Onychiurus ambulans v. *inermis* Agren. 1903—New Zealand: Blenheim, on seed-crop, April 1935 (E. C. C.); Palmerston North, 15 January 1937 (W. Cottier); Wanganui, 7 October 1938 (A. Dingwell); Owairaka, 18 June 1941 (D. S.); Grafton Gully, Auckland, from soil, 29 June 1941 (D. S.).

Subfamily TULLBERGINÆ Bagnall 1935

Tullbergia tillyardi Wom. 1939—Australia: Belgrave, Victoria, in rotting tree fern, November 1941 (O. W. T.).

Superfamily ENTOMOBRYOIDEA Wom. 1933

Family ISOTOMIDAE Schffr. 1896

Subfamily ISOTOMINAE (Schffr. 1898)

Cryptopygus tasmaniensis n. sp.

(Fig. 2, A-D)

Description—Length, to 2–2.5 mm. Colour, deep blue-black except the legs which are white. Antennae longer than the head, ratio of segments = 5:5:5:7.5. Eyes, eight on each side on ocular patch 70 μ long; postantennal organ 35 μ from anterior end of ocular patch, elliptical but one side rather straighter than the other and slightly notched, length 21.5 μ . Ratio of thoracic and abdominal segments = 1.8:1.5:1.2:1.2:1.2:1.4:1.7, VI hidden under V. Tibiotarsus with paired clavate setae, claws without teeth; empodial appendage about one-third claw. Furca short, 0.3 μ , long as figured, mucro with large subapical tooth. Dorsal setae numerous, uniform, to 54 μ long.

Location—Australia: Mount Wellington, Tasmania, in very large numbers on stones and crossing mountain paths, 30 January 1940 (V. V. H.).

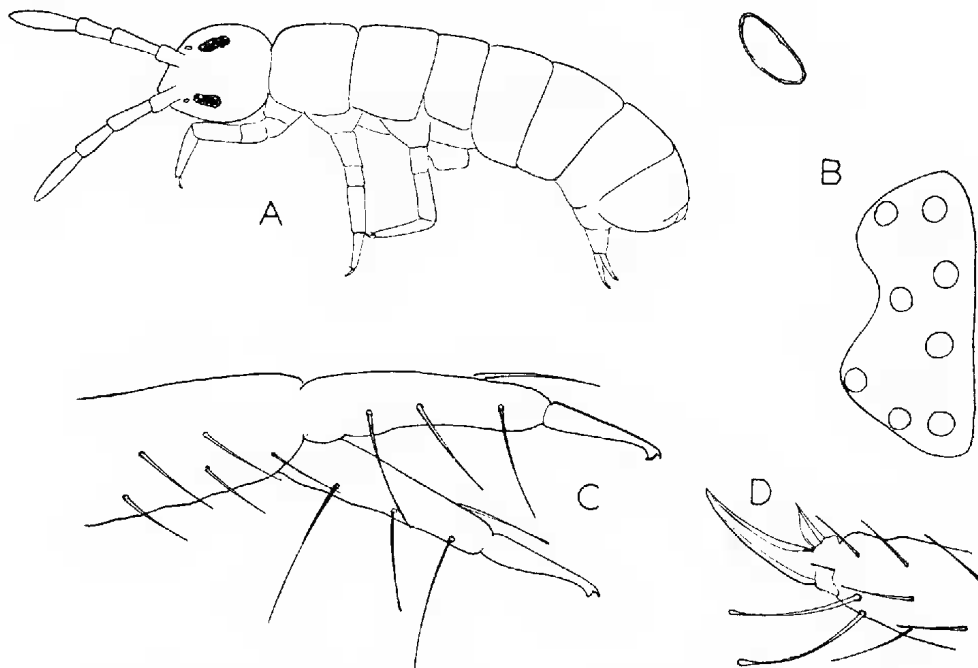


Fig. 2 **Cryptopygus tasmaniensis** n. sp.: A, entire; B, ocelli and postantennal organ; C, furca; D, tip of tibiotarsus, claw and empodial appendage.

Remarks—Closely related to *C. loftyensis* Wom. but differs in not having any inner tooth to the claw, ratio of antennal segments, etc.

Folsomia emeraldica (Rayment 1937)—New Zealand: Palmerston North, in rotting potatoes, 5 May 1931 (W. C.); Auckland, from decaying cherry seed, 11 July 1941 (D. S.).

Isotomurus palustris Müll. 1776)—Australia: Cumberland, Victoria, 26 May 1941 (R. T. M. P.); Mount Cascade Creek, Victoria, 26 June 1941 (R. T. M. P.). New Zealand: Nelson, on tobacco plants, 9 October 1933 (E. C. C.).

Proisotoma minuta (Tullbg. 1871)—New Zealand: Auckland, on decaying cuttings, 11 July 1941 (D. S.).

Proisotoma ripicola Linnan. 1912—Australia: Bell's Creek, Victoria, 24 June 1941 (R. T. M. P.).

Parisotomma pentomma (Wom. 1939)—Australia: Belgrave, Victoria, in rotting tree fern, November 1941 (O. W. T.).

Genus **Millsia** nov.

Description—Of Isotomid facies. Antennae longer than head, IV with apical knob, III with paired, stout, curved sensory rods. Eyes, eight on each side. Postantennal organ absent. No clavate tibiotarsal setae; empodial appendage present. Furca long, dens baso-laterally with spines and annulated in distal half, mucro falciform. All abdominal segments visible dorsally. Clothing of very long, closely pubescent setae. Genotype **Millsia tiegsi** n. sp.

Remarks—This genus is named after my American colleague, Prof. H. B. Mills.

Millsia tiegsi n. sp.

(Fig. 3, A-C)

Description—Colour white, except for the black ocular patch and a tinge of blue on the apical antennal segments. Length, to 1.0 mm. Eyes, eight on each side, equal. Postantennal organ absent. Antennae longer than head, ratio of

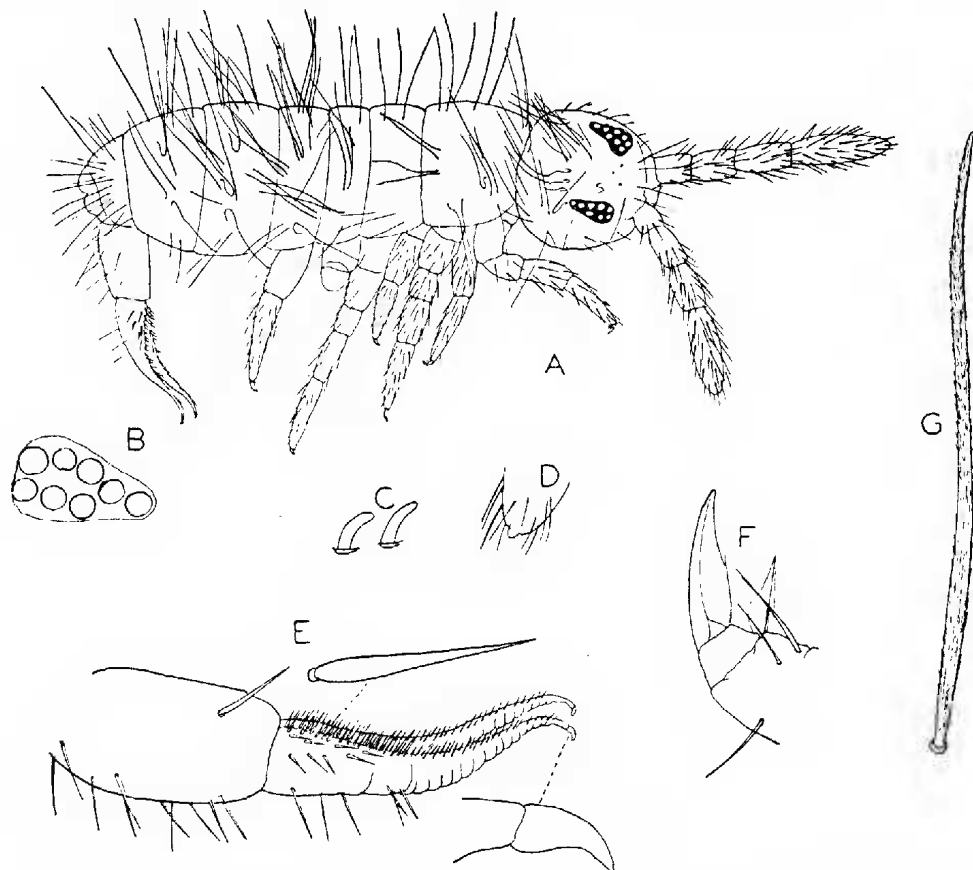


Fig. 3 **Millsia tiegsi** n. g., n.sp.: A, entire; B, ocelli; C, sensillae of ant. III; D, tip of ant. IV; E, furca with details; F, tip of tibiotarsus, claw, and empodial appendage; G, dorsal seta.

segments = 4:5:5:10, IV with apical knob, III with sensory organ as figured. Ratio of length of head, thoracic and abdominal segments = 14:11:5:5:6:9:9:4:3. Tibiotarsi without clavate setae, claw with a long fine inner tooth at a half; empodial appendage pointed with wide inner and narrow outer lamellae. Furca fairly stout, reaching to ventral tube; ratio manubrium:dens:mucro = 10:14:1, dens basally with spines, mucro falciform. Clothing on body of very long, 160 μ , slender, strongly pubescent setae; on legs of normal short setae.

Location—Australia: in rotting log of tree-fern, Belgrave, Victoria, November, 1941 (O. W. Tiegs).

Subfamily ONCOPODURINAE Börner 1913

This interesting subfamily has not hitherto been found in Australia. I am indebted to Dr. O. W. Tiegs for specimens of the following new species collected by him in Victoria. The occurrence of this subfamily in Australia is perhaps the most interesting discovery in the Collembolan fauna of this country for some years.

Oncopodura tiegsi n. sp.

(Fig. 4, A-D)

Description—Length, 370 μ . Colour, white. Eyes absent; post-antennal organ? absent. Antennae longer than head, segments III and IV with specialised sensory setae, number uncertain, but approximately as drawn. Furca as figured, but the serrated dental spines may be more than shown.

Location—Four specimens from decaying tree-fern log at Belgrave, Victoria, January and February, 1941 (O. W. T.).

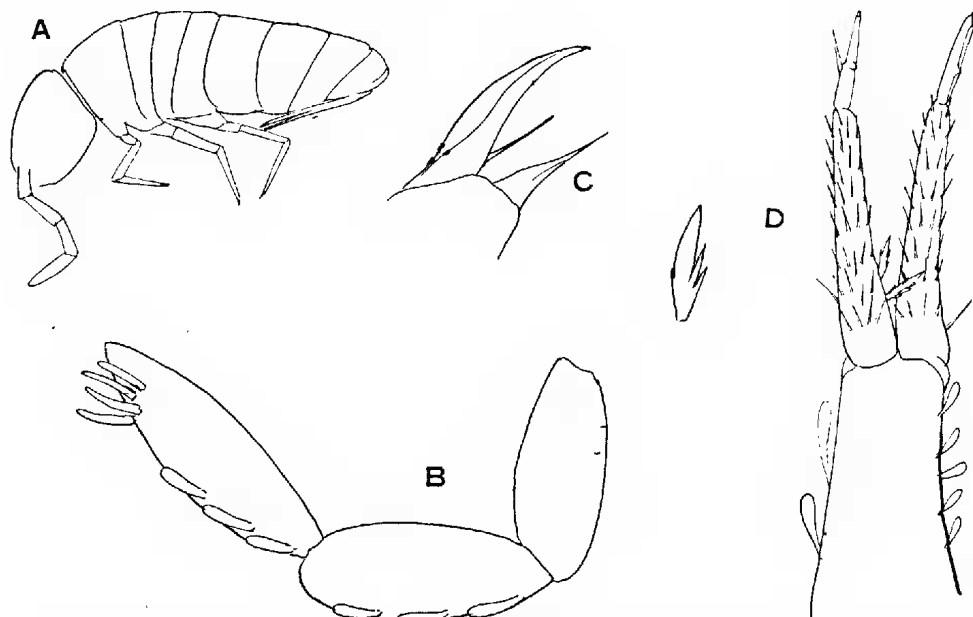


Fig. 4 *Oncopodura tiegsi* n. sp.: A, lateral view; B, antennal segments II-IV; C, claw, and empodial appendage; D, furca and dental spine.

Remarks—All previous known species of this genus are cave or soil inhabiting forms. Of the four specimens found, it has been possible to get a mount of one only and this itself is not altogether satisfactory for a complete description. As soon as further material can be obtained a more detailed description will be published.

Family TOMOCERIDAE (Schffr. 1896)

Subfamily LEPIDOPHORELLINAE Börner 1906

Lepidophorella australis Carp. 1925—New Zealand: Owairaka, in soil, 18 June 1941 (D.S.).

Subfamily TOMOCERINAE Börner 1906

Tomocerus tasmanicus Wom.—Australia: Mount Wellington, Tasmania, 30 January 1940 (V. V. H.).

Family ENTOMOBRYIDAE Börner 1913

Subfamily ENTOMOBRYINAE Börner 1906

Sinella termitum Schött. 1917—Australia: Brisbane, Queensland, in leaf mould, July 1940 (H. Jarvis); Mount Gambier, South Australia, under log, shore of Leg of Mutton Lake, January 1941 (H. W.).

Sinella coeca (Schött. 1896)—New Zealand: Auckland, in termites' nest after treatment, 16 June 1941 (J. Kelsey).

Entomobrya stramineola nom. nov.

= *Entomobrya straminea* Börner 1913, Handschin 1920, 1925, nec. Folsom 1898. (Fig. 5, A-C)

Location—In numbers in the leaf sheaths of banana at Morobe, New Britain, June 1937 (J. L. F.); and banana and sugar-cane, Brisbane, Queensland, 27 July 1940 (H. Jarvis).

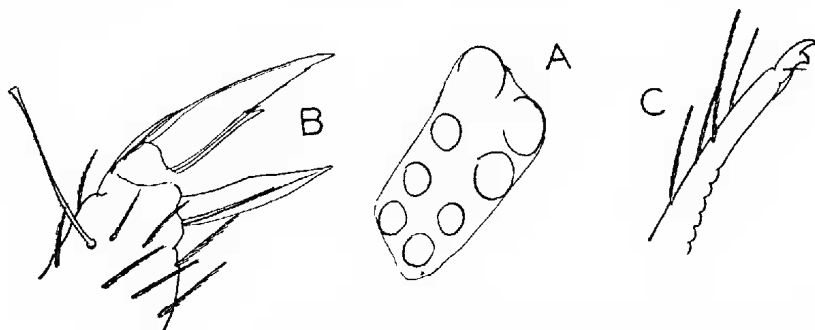


Fig. 5 **Entomobrya stramineola** n. nov.: A, ocelli; B, claw, empodial appendage, and tip of tibiotarsus; C, tip of dens and mucro.

Entomobrya termitophila v. *clarki* Wom. 1937—Australia: Bell's Creek, Victoria, 24 June 1941 (R. T. M. P.); Little Boys' Creek, Victoria 24 June, 1941 (R. T. M. P.).

Entomobrya multifasciata (Tullbg. 1871)—Australia: Brisbane, Queensland, in leaf mould, July 1940 (H. Jarvis).

Entomobrya nivalis Linne 1758—New Zealand: Palmerston North, on rotting swedes, 16 October 1930 (W. C.); Auckland, on roses, 21 April 1941 (J. Kelsey).

Entomobrya nivalis v. *immaculata* Schffr. 1896—New Zealand: Palmerston North, on dry rot of swedes, 25 June 1931 (J. G. G.); or new swede area 23 March 1931 (W. C.).

Sira jacobsoni Börner 1913—Australia: Cumberland, Victoria, at 4,000 feet, 26 May 1941 (R. T. M. P.).

Lepidocyrtinus queenslandica Wom. 1935—New Guinea: Rabaul, on over-ripe and decayed cocoa pods, July 1940 (J. L. Froggatt).

Lepidocyrtoides cheesmani Wom. 1937—Australia: Coreen, Queensland, under pig-face in newly burnt scrub April 1941 (Fergusson).

Mesira flavocincta v. *unicolor* Wom. 1934—Australia: Coraline, near Mount Gambier, South Australia, January 1941 (H. W.).

Mesira brunnea Wom. 1935—Australia: Brisbane, Queensland, in leaf mould, 27 July, 1940 (H. Jarvis).

***Mesira cincta* n. sp**

(Fig. 6, A-B)

Description—Length, to 3.7 mm. Colour, yellowish with blue-black markings, scattered on the head, dense laterally on thorax II and III and abdomen I, laterally and along posterior margin on abdomen II, entire band on abdomen III, and laterally on abdomen IV; furca blue near junction of manubrium and dens. Legs with coxae and trochanters blue, femora blue-black at tip, tibiotarsi bluish towards apex. Antennae? longer than head, darkening on apical segments, ratio of segments I:II:III:IV: = 4:5:?:?. Ocelli, eight on each side on black patch. Ratio of lengths of head, thoracic and abdominal segments = 50:40:22:12:15:12:100:10:5. Furca: ratio of manubrium:dens:mucro = 70:85-90:3; dens annulated, distal unannulated part three to four times length of mucro, mucro as figured with two teeth and basal spine. Claws with paired inner teeth at one-third, and one fine distal tooth at three-fourths, with outer basal tooth, praetarsus with small paired outer teeth. Empodium lanceolate, about half length of claw. Tibiotarsus with a long and strong spatulate seta.

Location—Australia: Cumberland, Victoria, 26 May 1941 (R. T. M P.).

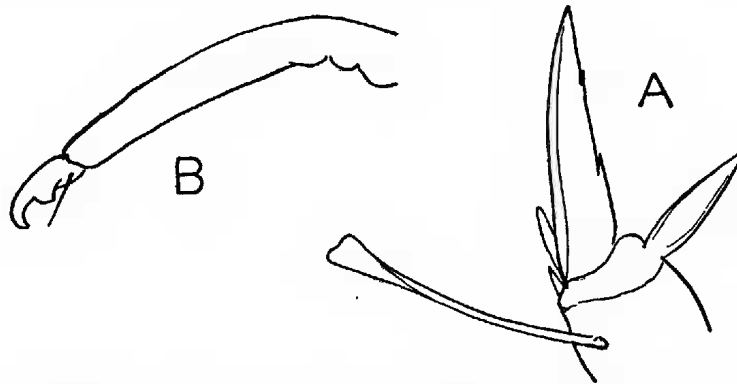


Fig. 6 *Mesira cincta* n. sp.: A, claw, empodial appendage and tip of tibiotarsus; B, mucro and tip of dens.

Genus ***Promesira*** nov.

For *Mesira nigrocephala* Wom. 1934.

An examination of fresh material from Biloela, Queensland, and Earlsfield, Queensland, April (Fergusson), revealed the presence of bothriotrichia on abd. II, III and IV, and this was later confirmed by a re-examination of my type material.

***Promesira nigrocephala* n. comb.**

A very variable species, ranging from dirty yellow with two transverse dark spots on posterior margin of abd. IV. to entirely black.

Location—Australia: Biloela, Queensland, April 1941 (Fergusson); Earlsfield, Queensland, from *Portulaca oleracea* in forest country, April 1941, (Fergusson).

Urewera flava Salmon 1938—New Zealand: Auckland, Waitakeri Ranges, 14 July 1941 (D.S.).

Urewera purpurea Salmon 1938—New Zealand: Auckland, 23 July 1941 (E. Ballard).

Suborder SYMPHYPLEONA Börner 1941

Family NEELIDAE Folsom 1896

Megalothorax swani (Wom. 1932)—Australia: Belgrave, Victoria, in rotting tree-fern, November 1941 (O. W. T.).

Family SMINTIURIDAE Lubbk. 1870

Sminthurinus aureus v. *ochropus* (Reuter 1891)—Australia: Little Boys' Creek, Victoria, 24 June 1941 (R. T. M. P.); Bell's Creek, Victoria, 24 June 1941 (R. T. M. P.).

***Parakatianna zebra* n. sp.**

(Fig. 7, A-E)

Description—Length, 1,200 μ . Colour, yellow with transverse dark bands between and in front of the eyes; on the abdomen with black bands as follows; on anterior half with a crescent-shaped band running from middle of dorsum, anteriorly down the sides from the middle of this band a longitudinal band runs almost to the genital segments, and from each side of this two transverse bands run down the sides, these lateral marks give a zebra-like effect; antennae dark on III and IV. Ocelli, eight on each side on pigmented patches. Antennae much longer than head, ratio of segments ca. 20:45:65:150, IV with about 16 subdivisions. Claws as figured, with inner tooth just beyond middle, empodial appendage as figured. Tibiotarsus with three fine clavate setae. Mucro as figured, with toothed inner lamella. Clothing of strong setae, but not so long and strong as in *Katianna*. Female genital appendage as shown.

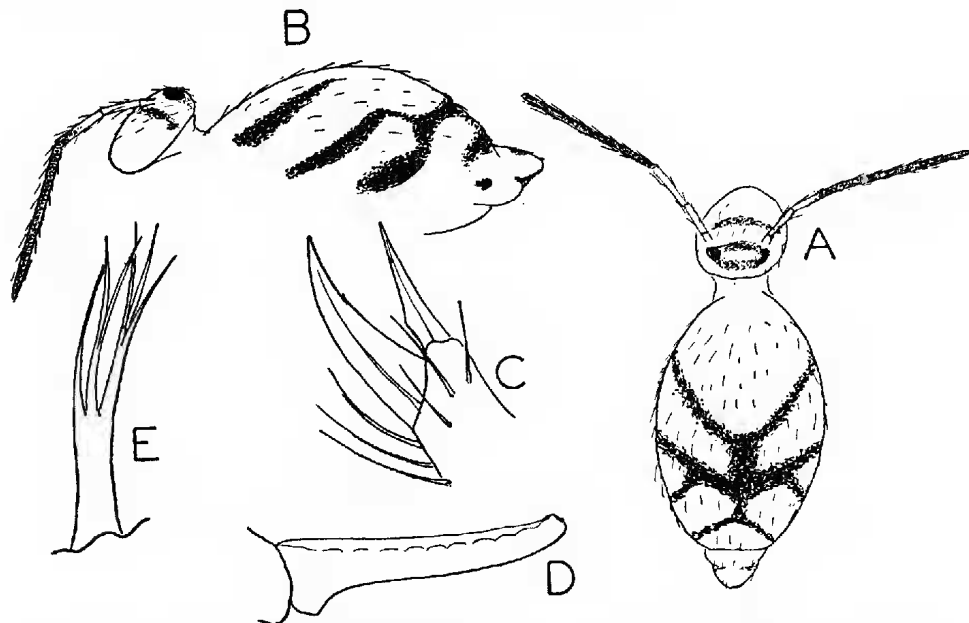


Fig. 7 *Parakatianna zebra* n. sp.: A, dorsal view; B, lateral view; C, claw, empodial appendage and tip of tibiotarsus; D, mucro.

Location—Australia: Brisbane, Queensland, a single specimen in leaf mould, July 1940 (H. Jarvis).

Bourletiella arvalis (Fetch 1863)—New Zealand: Palmerston North, on new swede area, 25 March 1931 (W. Cottier).

Deuterosminthurus bicinctus v. *repandus* Agren. 1903—New Zealand: Lumsden, on dock 22 January 1930 (W. C.); Palmerston North, on broad beans 26 October 1931 (J. G. G.); Avondale, on pumpkins, 1 April 1939 (D. S.).
Deuterosminthurus bicinctus v. *pallipes* Lubk. 1867—New Zealand: localities as above.

***Corynephoria quadrimaculata* n. sp.**

(Fig. 8, A-D)

Description—Length, 0.9 mm.. Colour, dorsally yellowish, laterally dirty white with a pair of black spots before anal segments. Eys, eight on each side, on black patch. Antennae and dorsal club brownish. Antennae not much longer than head, ratio of segments = 12:23:32:73, 1V with 10 subdivisions. Dorsal hump club-shaped, directed backwards and furnished with short spines. Tibiotarsi with three stout spathulate setae. Claw simple, empodial appendage modified as a thin spathulate seta. Furca as figured, ratio of dens: mucro = 70:17.

Location—Australia: a number of specimens by sweeping ti-tree, Port McDonnell, South Australia, January 1941 (J. S. W.).

Remarks—Related to *C. absoloni* Wom. 1939, but differing in the colour, and in the absence of the small dorsal tubercle in front of the club.

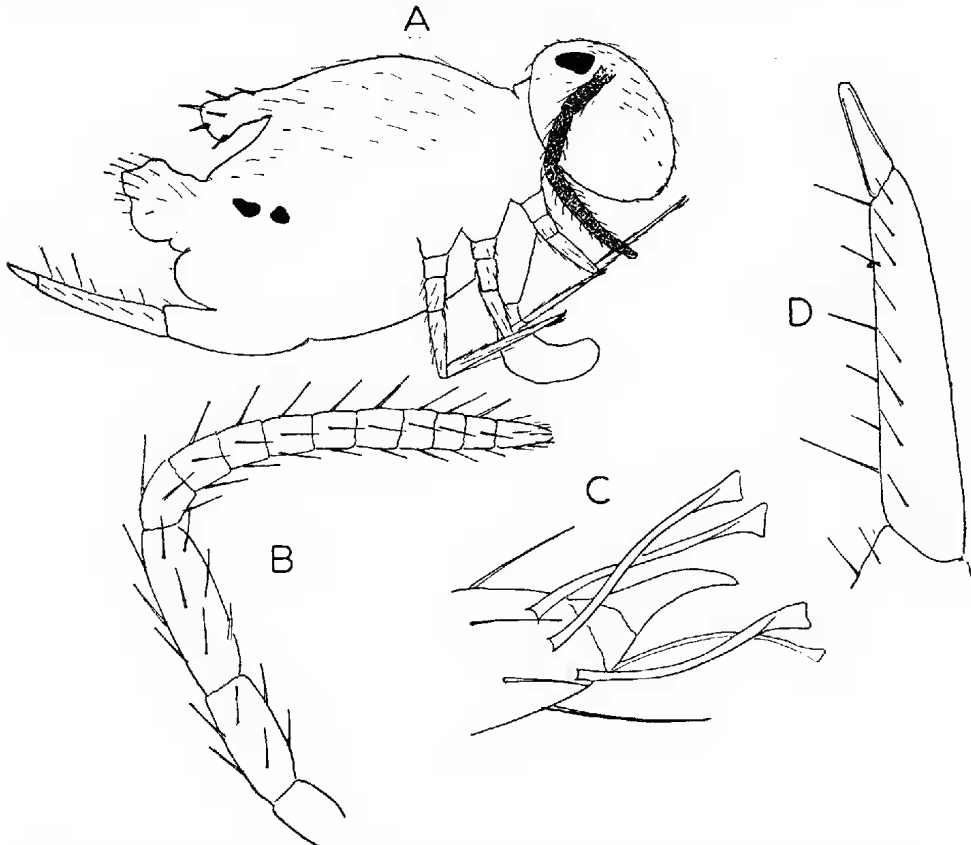


Fig. 8 *Corynephoria quadrimaculata* n. sp.: A, lateral view; B, antenna; C, tip of tibiotarsus; D, mucro and dens.

Sminthurus viridis L.—New Zealand: Lumsden, Auckland, on *Plantago major* 21 January 1930 (W. C.).

Sminthurus regalis Wom. 1939—Australia: Belgrave, Victoria, in rotting tree fern, November 1941 (O. W. T.).